

**REMARKS****I. Introduction**

Applicants would like to thank the Examiner for the indication of allowance of claims 4-17, and indication of allowable subject matter recited by claims 2 and 3. For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

**II. The Rejection Of Claim 1 Under 35 U.S.C. § 103**

Claim 1 is rejected under 35 U.S.C. § 103 as being unpatentable over Applicants' admitted prior art ("AAPA") in view of USP No. 4,355,304 to Kasuga. Applicants respectfully traverse this rejection for at least the following reasons.

Claim 1 relates to a digital signal receiver comprising an input terminal for receiving a digital modulation input signal, at least two variable gain amplifiers coupled in series to the input terminal for controlling the level of the input signal; an analog-to-digital (A/D) converter for receiving an output of the variable gain amplifier, a level comparator coupled to an output of the A/D converter for comparing a level of the output of the A/D converter and a reference level, a loop filter coupled to the level comparator, and a control voltage generator for generating control voltages for controlling the variable gain amplifiers based on an output of the loop filter, wherein an operation-starting point of any the variable gain amplifier is shifted using the control voltages when a level fluctuation response speed of any of the variable gain amplifiers is lower than a reference level.

***Combination Of Prior Art Does Not Disclose All Claim Elements***

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the **claimed invention** where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *Ecolchem Inc. v. Southern California Edison Co.*, 227 F.3rd 1361, 56 U.S.P.Q.2d (BNA) 1065 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2D (BNA) 1614, 1617 (Fed. Cir. 1999); *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992). See also **M.P.E.P § 2143.01**.

Turning to the cited prior art, the Examiner asserts that Kasuga discloses that the operation-starting point of any of the variable gain amplifiers is shifted using control voltages when a level fluctuation response speed of any of the variable gain amplifiers is lower than a reference level (see, col. 4, lines 13-37, lines 51-68, col. 5, lines 1-42 and col. 6, lines 6-27).

However, contrary to the conclusion set forth in the pending rejection, Kasuga discloses, at the cited portion, that the output expected signal  $Z_n$  of the expected signal generating circuit 17 is supplied to a comparator 19, wherein the level in the analog conversion value of the expected signal is compared to a reference level  $l_n$  supplied from the variable reference level generator 18. When the level of the digital signal  $z_n$  is higher or lower than the reference level  $l_n$ , a signal for reducing or increasing the gain  $G_1$  of the variable gain circuit 14 and changing the reference level of the variable reference level generator 18 into a new reference level by reducing or increasing the same amount as the gain  $G_1$  is supplied as an output from the comparator 19, respectively. The **reduction or increase in gain at the variable circuit 14** is then performed by **shifting the bits** in the LSB (least significant bit) or MSB (most significant bit) direction, and by decreasing

or increasing the value of coefficient, respectively (see, col. 5, lines 6-43). In other words, Kasuga specifically discloses adjusting and controlling the gain  $G_1$  based on the output of expected signal generating circuit.

However, at a minimum, Kasuga is silent to using control voltages for shifting any operation-starting point of the variable gain circuits, as recited by claim 1. Indeed, nowhere does Kasuga appear to even discuss or recognize utilizing any control voltage in the manner asserted by the Examiner. The Examiner has neither addressed how Kasuga utilizes control voltages for shifting the operation-starting point of the alleged variable gain circuits. As discussed above, Kasuga adjusts the gain by shifting the bits and changing value of the coefficient, rather than utilizing control voltages as asserted in the Office Action.

Thus, as each and every limitation must be either disclosed or suggested by the cited prior art in order to establish a *prima facie* case of obviousness (see, **M.P.E.P. § 2143.03**), and the AAPA or Kasuga, taken alone or in combination, fails to do so, it is respectfully submitted that claim 1 is patentable over the prior art.

### ***There Is No Motivation To Make The Proposed Combination Of Prior Art***

In order to establish the requisite motivation, the Examiner must point to a **source** in the applied prior art for **each** claim limitation and a **source** in the applied prior art for the requisite **motivational** element. *Smiths Industries Medical System v. Vital Signs Inc.*, 183 F.3d 1347, 51 USPQ2d 1415 (Fed. Cir. 1999). More to the point, the Examiner is required to make a “thorough and searching” factual inquiry and, based upon that factual inquiry, explain **why** one having ordinary skill in the art would be realistically impelled to modify particular prior art, in this case the particular digital signal receiver of the AAPA, to arrive at the claimed invention. *In*

*re Lee*, 237 F.3d 1338, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Such a factual inquiry requires clear and particular factual findings as to a specific understanding or specific technological principle which would have realistically impelled one having ordinary skill in the art to modify the particular digital signal receiver of the AAPA to arrive at the claimed invention. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.*, 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). Merely identifying wherein features of a claimed invention are perceived to reside in disparate references does not establish the requisite motivation. *In re Kotzab, supra*; *Grain Processing Corp. v. American-Maize Products Co.*, 840 F.2d 902, 5 USPQ2d 1788 (Fed. Cir. 1988). Rather, a **specific reason** must be offered based upon **facts** to support the asserted motivation--not generalizations. *Ecolochem Inc. v. Southern California Edison, Co. supra*; *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

In applying the above legal tenets to this case, Applicants submit that the requisite motivation element has **not** been established. Specifically, the Examiner has not actually explained **why** based on **facts**, one having ordinary skill in the art would somehow have proceeded **against** the specific teachings of the AAPA by shifting the operation-starting point of any of the variable gain amplifiers using control voltages when a level fluctuation response speed of any of the variable gain amplifiers is lower than a reference level.

In particular, the AAPA discloses a conventional digital signal receiver, where the output of variable gain amplifiers 102/104 is converted into a digital signal through the analog-to-digital (A/D) converter 106. The output of converter 106 is then filtered by the loop filter 113, where the filtered output is fed into the control voltage generator 114. In this regard, Applicants note

that the AAPA specifically discloses connecting the variable gain amplifiers 102/104 to the input of A/D converter 106, and transmitting the converted signal to the input of loop filter 113 (see, Fig. 13). However, Kasuga discloses connecting the alleged variable gain amplifiers 14/22 to the output of A/D converter 13, and coupling the output of low pass filter 11 to the A/D converter 13 through the sample hold circuit 12.

Hence, the Examiner's conclusion of obviousness is without any evidentiary foundation because the AAPA's structure requires that the variable gain amplifiers 102/104 couple to the input terminal of A/D converter 106 and the loop filter 113 connects to the output stage of A/D converter 106, whereas Kasuga requires that the variable gain amplifier 14 connects to the output terminal of A/D converter 13 and the low pass filter 11 couples to the input stage of variable gain amplifier 14. As such, since the structure disclosed in the AAPA differs from the structure of Kasuga, and that the claimed digital signal receiver is fundamentally different from that disclosed by the combination of the AAPA and Kasuga, it is respectfully submitted that one of ordinary skill in the art would NOT have been realistically motivated to modify the conventional digital receiver of the AAPA so that the operation-starting point of any of the variable gain amplifiers is shifted using control voltages when a level fluctuation response speed of any of the variable gain amplifiers is lower than a reference level as disclosed by Kasuga.

Indeed, in accordance with one embodiment of the present invention, by setting the operation-starting point of the variable gain amplifier, the level fluctuation frequency characteristic is improved (see, e.g., page 15, lines 10-14 of the specification), or a desirable level fluctuation response regardless of the input level is achieved (see, page 8, lines 10-14). However, nowhere does the AAPA or Kasuga, taken alone or in combination, disclose or suggest

shifting the variable gain amplifiers using control voltages so as to achieve these desirable results.

It should be recognized that the fact that the prior art could be modified so as to result in the combination defined by the claims at bar would not have made the modification obvious unless the prior art suggests the desirability of the modification. *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986).

Moreover, recognizing after the fact that such a modification would provide an improvement or advantage, without suggestion thereof by the prior art, rather than dictating a conclusion of obviousness, is an indication of improper application of hindsight considerations. Simplicity and hindsight are not proper criteria for resolving obviousness. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967).

It is only Applicants' disclosure that discloses the foregoing digital signal receiver. Neither the AAPA nor Kasuga disclose or suggest such a digital receiver as recited by claim 1. Thus, the only motivation of record for the proposed modification of the method of the AAPA to arrive at the claimed invention is found in Applicants' disclosure which, of course, may not properly be relied upon to support the ultimate legal conclusion of obviousness under 35 U.S.C. § 103. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 2271 USPQ2d 1593 (Fed. Cir. 1987).

For at least these reasons, it is respectfully submitted that claim 1 is patently distinct over the prior art.

**III. All Dependent Claims Are Allowable Because The Independent Claims From Which They Depend Are Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also in condition for allowance.

For all of the foregoing reasons, it is submitted that claims 2 and 3 are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejection of claim 1 under 35 U.S.C. § 103 and objection to claims 2 and 3 be withdrawn.

**IV. Conclusion**

Accordingly, it is urged that the application is in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

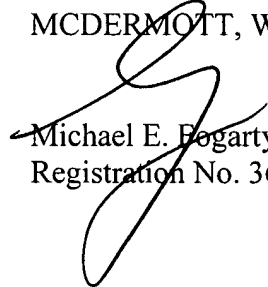
To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

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including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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